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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,614	12/04/2003	Alexander W. Roesler	SD7299/S100356	2874
20567	7590	09/29/2006	EXAMINER	
SANDIA CORPORATION P O BOX 5800 MS-0161 ALBUQUERQUE, NM 87185-0161			JACKSON, STEPHEN W	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,614	ROESLER ET AL.	
	Examiner	Art Unit	
	Stephen W. Jackson	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-24 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 9 is/are rejected.
- 7) ☒ Claim(s) 3-8 and 10-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12-4-03</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bylsma et al (5,992,401) in view of Abt et al (5,543,644).

Bylsma teaches a capacitive discharge ignition system deriving the ignition pulse from a capacitor storing the flyback voltage induced from the fuel injector coil when the pulse supplied to the fuel injector coil is removed.

Circuit 10 shown in Fig. 2 includes the injector coil 12 driven by a first circuit 14 which includes a MOS controlled transistor 16. A second circuit 18 couples the flyback voltage from the injector coil to a capacitor 20 where it is stored. When switch 22

(thyristor 30 and its drive circuit) is activated, the voltage on capacitor 20 is coupled to ignition coil transformer 24 to cause the needed ignition pulse. Second circuit 18 includes a zener diode 26 and a freewheeling diode 28 (see col. 3, lines 4-26).

The device taught by Bylsma differs from the claims by not being said to use a ceramic capacitor or a PLZT ceramic capacitor as the means for storing electrical energy.

Abt teaches a ceramic capacitor and in the discussion of the prior art, indicates that PLZT capacitors are known in the art (see col. 1 lines 40-45) and known to be an effective device for storing electrical energy (see col.1 lines 61-65).

It would have been obvious to one of ordinary skill in the art to combine the type of capacitor taught by Abt into the capacitive discharge circuit of Bylsma because both teachings make use of the ability of capacitors to store energy, with Abt teaching a type of capacitor known to be used in integrated circuits (col. 2, line 7), with a person of ordinary skill choosing such a capacitor to reduce the overall size of the ignition circuit, by forming said circuit as a monolithic circuit. The combination of several circuits elements into a single IC is extremely well known as a way to simplify device manufacture and reduce the "footprint" of a device, in systems where reducing the size of components increases the efficiency of the overall arrangement.

Allowable Subject Matter

Claims 3-8, 10-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 18-24 are allowed.

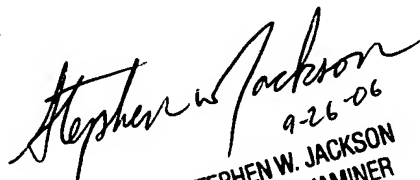
The following is a statement of reasons for the indication of allowable subject matter: The use of LTCC type ceramic transformers in the disclosed capacitive discharge unit is not taught or fairly suggested by the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Jackson whose telephone number is 571-272-2051. The examiner can normally be reached on 6:30am-3:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SWJackson


9-26-06
STEPHEN W. JACKSON
PRIMARY EXAMINER

September 26, 2006